PATENT COOPERATION TREATY

Sender: **THE INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY**

PCT

NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY REPORT (Rule 71.1 PCT)

To:
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Date of mailing *(Day/month/year)* 09.05.2006

Applicant's or agent's file reference
WS 2253 PCT

IMPORTANT NOTIFICATION

International application No.	International filing date (*Day/Month/Year*)	Priority date (*Day/Month/Year*)
PCT/EP2004/014786	29.12.2004	04.02.2004

Applicant

SAURER GMBH & CO. KG

1. The Applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the International Preliminary Report on patentability and its annexes, if any, established on the International Application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for Communication to all the elected Offices.

3. Where required by any of the elected offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those offices.

4. **REMINDER**

   The Applicants must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the information sent by the International Bureau with form PCT/1B/301).

   Where a translation of the International Application must be furnished to an elected Office, that translation must contain a translation of any annexes to the International Preliminary Report on patentability. It is the Applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

   For further details on the applicable time limits and requirements of the elected Offices see Volume II of the PCT Applicant's guide.

   The Applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purpose of International Preliminary Examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure of the invention and clarity and support for the claims.

Name and mailing address of the International Examining Authority:	Authorised officer
European Patent Office – P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk – Pays Bas Tel. +31 70 340 -2040, Tx: 31 651 epo nl Fax: +31 70 340 – 3016	Blouw, J Tel. +31 70 340 – 4118 EPO stamp

Form PCT/IPEA/416 (January 2004)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Article 36 and Rule 70 PCT)

Applicant's or agent's file reference WS 2253 PCT	FOR FURTHER ACTION	See communication on transmittal of international preliminary examination report (Form PCT/IPEA/416)
International application No. PCT/EP2004/014786	International filing date (*Day/Month/Year*) 29.12.2004	Priority date (*Day/Month/Year*) 04.02.2004
International Patent Classification (IPC) or national classification and IPC INV. DO1H4/38		
Applicant SAURER GMBH & CO. KG		

1. This international preliminary examination report, was established by the International Preliminary Examining Authority and is transmitted to the Applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

   X This report is also accompanied by ANNEXES comprising sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorised by this Authority (see Rule 70.16 and Section 607 of the Administration guidelines for the PCT).

   These Annexes comprise a total of 3 sheets.

3. This report contains indications relating to the following items:

I	X	Basis of the report
II	☐	Priority
III	☐	Non-establishment of opinions with regard to novelty, inventive step and any industrial applicability
IV	☐	Lack of unity of invention
V	X	Reasoned statement under Rule 66.2 a)ii) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
VI	☐	Certain documents cited
VII	☐	Certain defects in the international application
VIII	☐	Certain observations on the international application

Date of submission of the request 16.06.2005	Date of completion of this report 09.05.2006
Name and mailing address of the International Examining Authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk – Pays Bas Tel. +31 70 340-2040 Tx: 31 651 epo nl Fax: +31 70 340-3016	Authorised officer Henningsen, O Tel. +31 70 340-2947 EPO stamp

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International Application No. PCT/EP2004/0014786

I. Basis of the report

1. With regard to the **elements** of the international application, the report is based on (*replacement sheets which have been furnished to the application office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report because they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages
1-12 in the originally filed version

Claims, No.
1-9 received on 16.06.2005 with the communication dated 13.06.2005

Drawings, sheets
1/5-5/5 in the originally filed version

2. With regard to the **language**: all the elements mentioned above were available to the Authority in the language in which the International Application was filed, or were filed in thislanguage if nothing different stated under this point.

The elements were available to the Authority in the language: or were filed in this language; this language is:

- ☐ the language of the translation, which has been filed for the purposes of the International Search (according to Article 23.1(b)).
- ☐ the application language of the International Application (according to Rule 48.3(b)).
- ☐ the language of the translation, which has been filed for the purposes of the International Preliminary Examination (according to Rule 55.2 and/or 55.3).

3. With regard to the **nucleotide and/or amino acid sequence** disclosed in the International Application, the International Preliminary Examination has been carried out on the basis of the sequence listing which:

- ☐ is contained in the International Application in written form.
- ☐ has been filed together with the International Application in computer-readable form.
- ☐ has been filed subsequently with the Authority in written form.
- ☐ has been filed subsequently with the Authority in computer-readable form.
- ☐ The Declaration that the subsequently filed written sequence listing does not go beyond the disclosure content of the International Application at the time of application, has been submitted.
- ☐ The Declaration that the information comprised in computer-readable form corresponds to the written sequence listing, has been submitted.

4. The amendments have resulted in the cancellation of:

   ☐ Description, Pages:

   ☐ Claims: No.:

   ☐ Drawings, Sheet:

5. ☐ This report has been established without considering (some of) the amendments, as these have been considered in the opinion of the Authority to go beyond the disclosure as originally filed (Rule 70.2(c) for the given reasons).

   (Replacement sheets, which contain such amendments are to be referred to under Item 1; they are to be annexed to this report.)

6. Any further comments:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; documents and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims 1-9
	No:	Claims
Inventive step (IS)	Yes:	Claims 1-9
	No:	Claims
Industrial applicability (IA)	Yes:	Claims 1-9
	No:	Claims

2. Documents and explanations:

   see supplementary sheet

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (SUPPLEMENTARY SHEET)

International Application No. PCT/EP2004/014786

Item V

Reasoned statements with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

   D1: DE 197 12 881 A1 (W. SCHLAFHORST AG & CO, 41061 MOENCHENGLADBACH, DE) 1st October 1998

   D2: DE 25 44 721 A1 (FELDMUEHLE ANLAGEN- UND PRODUKTIONSGESELLSCHAFT MBH) 14th April 1977

2. Document D1 is regarded as the closest prior art compared to the subject of claims 1 and 4. It discloses a fibre guide channel mechanism (14) for an open end spinning device according to the introductory part of claim 1.

   D1 also discloses that the fibre guide channel (49) is configured as a hollow body, the internal cross-section of which reduces in the direction of its orifice (column 4, line 39 to 55).

   This fibre guide channel mechanism (14) is a cast part and therefore produced by a casting method (claim 1 of D1). Therefore D1 also discloses the introductory part of claim 4, namely a method for producing a fibre guide channel.

2.1 The subject of claim 1 therefore differs from the known D1 in that the fibre guide channel (13) is produced at least partially by a manufacturing method, in which a first over-sized blank shape is initially produced by injection moulding from a mixture of a sinterable material and a binder and is converted into a porous intermediate shape by removing the binder and brought into a final shape which requires little finishing by sintering.

   The subject of claim 4 differs from the known D1 in that the fibre guide channel (13) is produced at least partially with the following method steps, producing a mixture from a sinterable material and a binder, producing a blank body from this mixture by powder injection moulding, releasing the blank body from its binder portions and hardening the porous blank body by sintering into its final shape. Accordingly the subject of claim 1 and claim 4 of the application are novel in the context of Article 33(2) PCT.

2.2 Document D2 is regarded as important compared to the subject of claims 1 and 4. It discloses (the references in brackets relate to this document):

   A *take-off nozzle* which is configured as a hollow body, produced using the following method steps:

producing a mixture from a sinterable material and a binder, producing a blank body from this mixture by powder injection moulding, releasing the blank body from its binder portions and hardening the porous blank body by sintering into its final form. (Page 12, section 1, page 15, paragraph 4).

3. The object to be achieved by the present invention can be regarded as implementing a simplified method and a fibre guide channel resulting from this method.

3.1 Document D2 indeed discloses a method, which uses the same steps as described in claims 1 and 4 of the present application, but D2 deals with the production of a *take-off nozzle*, the inner working face of which is influenced by a finished spun thread and not by loose flying fibres. The conditions under which the wear of the working face of the take-off nozzle and of the fibre guide channel takes place are therefore different. Moreover, nozzles of this type are much smaller than fibre guide channels.

3.2 It is therefore not obvious to the person skilled in the art to implement a method for producing a fibre guide channel with the aid of the method disclosed in D2. This solution is therefore based on an inventive step (Article 33(3) PCT).

4. Claims 2 and 3 are dependent on claim 1 and claims 5 to 9 are dependent on claim 4. Therefore claims 2 and 3 and 5 and 9 also meet the requirements of the PCT with respect to novelty and inventive step.

Amended claims

1. Fibre guide channel for an open end spinning device, for the pneumatic transportation of individual fibres, which are combed out of a feed fibre band by an opening cylinder rotating in an opening cylinder housing, to a spinning rotor running at a high speed in a rotor housing that can be subjected to a negative pressure, characterised in that the fibre guide channel (13) is configured as a hollow body, the internal cross-section of which decreases toward its orifice (26), the fibre guide channel (13) being produced at least partially by a manufacturing method, in which a first over-sized blank shape is initially produced by injection moulding from a mixture of a sinterable material and a binder and is converted into a porous intermediate shape by removing the binder and brought into a final shape which requires little finishing by sintering.

2. Fibre guide channel according to claim 1, characterised in that a metal powder is used as the sinterable material.

3. Fibre guide channel according to claim 1, characterised in that an oxide ceramic powder is used as the sinterable material and is processed with the binder to form pellets.

4. Method for producing a fibre guide channel for an open end spinning device, for the pneumatic transportation of individual fibres, which are combed out from a feed fibre band by an opening cylinder rotating in an opening cylinder housing, to a spinning rotor, running at a high speed in a rotor housing that can be subjected to a negative pressure,

characterised in that the fibre guide channel (13) is produced at least partially by the following method steps, producing a mixture from a sinterable material and a binder, producing a blank body from this mixture by powder injection moulding, releasing the blank body from its binder portions and hardening the porous blank body by sintering into its final shape.

5. Method according to claim 4, characterised in that the inner contour of the fibre guide channel can be influenced by targeted mass concentration at the outer periphery.

6. Method according to claim 4, characterised in that the surface structure of the fibre guide channel can be influenced by the material of the sinterable material, the grain size of the material and the binder removal and sintering parameters.

7. Method according to claim 4, characterised in that at least one insertion piece (27) arranged in the region of an inlet opening (18) of the fibre guide channel is manufactured by the above method steps.

8. Method according to claim 4, characterised in that the fibre guide channel (13) can be subjected to a heat treatment (for example nitration, boration, etc.).

9. Method according to any one of the preceding claims, characterised in that the surface of the fibre guide channel (13) that comes into contact with the individual fibres, is coated.